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Some Clinical Observations on Johne's Disease of Sheep*

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The appended clinical observations were acquired whilst engaged in other primary duties and must in no way be taken as representing the views of the Ministry of Agriculture.

Ovine pseudo-tuberculosis is more widespread among lowland and upland flocks than hitherto accepted. The disease is subject to marked seasonal variation with a flock case rate fluctuating between 0·2 and 5·0 per cent. This subject has been chosen not because of any associated economic importance *per se* but in virtue of the clear relationship to non-specific factors of immunity. It symbolizes the eternal question of type against environment. The history is one of progressive loss of condition with or without diarrhoea, with no response to anthelmintic treatment.

The symptoms are emaciation, loss of body weight with atrophy of skeletal musculature, persistent diarrhoea, tail badly stained by liquid faeces; the sclera, at first injected, becomes pallid; a catarrhal conjunctivitis may be present. Growth of wool is sparse and it is of poor lustre, parting easily on the back. The abdomen is tucked up. The teeth in older sheep are loose and brittle; younger sheep are backward in shedding their temporaries. The tail is very thin. The long bones from knee and hock downwards give the animal the appearance of being "very light of bone." There is reduction in range of vision; the gait is slow and when subjected to canine persuasion the affected sheep usually drop exhausted. In younger sheep the symptoms are indistinguishable from parasitic gastro-enteritis with which condition it is frequently associated. The abdomen in this case is distended during early stages, later becoming hollow. Again in older sheep there may be complete absence of diarrhoea, faeces may be perfectly formed up to the time of death or a short terminal enteritis may set in a few days preceding death. Submaxillary oedema may be present. The course of the disease in older sheep is rather protracted—the animal may live for two years. Younger sheep—under twelve months—may die within a few months. The animal sinks very suddenly as the terminal stage is reached.

Post-mortem examination reveals the obvious loss of body weight, the thin darkly stained tail, mucous membranes pallid, depletion of fat reserves, general thickening of the intestines and corrugation—the mucous surface of which may be slightly bile stained. This intestinal corrugation and thickening is not found in young sheep where the onset of disease is rapid.

Diagnosis is based on the examination of faeces, direct smears from ilio-caecal region—stained Z.N.—and in the living subject reaction to johnin, coupled with history.

Faeces in the living animal are taken directly from the rectum, using a rubber glove. They are very difficult to collect when liquid; on the other hand, they may be perfectly formed and hard. The comprehensive examination of faeces has very kindly been undertaken by Mr. Rowlands, V.I.O., Bangor. Positive faeces which may have an associated significant egg count, are found towards the terminal stage of disease, but not in early or intermediate stages.

Johnin.—A considerable number of sheep have been tested over the last two years using P.P.D. johnin 1 mg. per c.c., dose 0·1 c.c. The most sensitive site appears to be the caudal fold. The reaction obtained is well marked and definite, a lineal oedematous swelling of the fold increasing from an initial measurement of 2 to 3 mm. to as much as 14 mm. in 48 hours. The oedema, in some cases extending along the fold, involves the lip of the vulva on the same side. The reaction compares with that obtained using avian tuberculin—0·4 mg. per c.c., dose 0·1 c.c. One inoculation read at 48 hours (caudal fold), appears more sensitive than the D.I.D. method using cervical region or inner thigh areas and is infinitely less trouble to the operator.

Reactions have been recorded in as many as 33 per cent. of a breeding flock.

*Paper to the North Wales Division, N.V.M.A., at Bangor, July 13th, 1945.

The interpretation of the test was at first rather confusing. Some obvious clinical cases gave no reaction whilst sound sheep that would and did remain good breeding ewes for many seasons gave positive reactions. A possible explanation was found later.

At this stage it was obvious that any attempt to control the disease in flocks with the higher case rate by removal of reactors was grossly impracticable. One might have been tempted to dispute the validity of the test. As time went on it became apparent that the "early clinical cases" gave no reaction whilst more advanced cases provoked a definite response. Others *in extremis* gave no response.

Twelve breeding flocks were selected where the cases were few in number and their histories known with accuracy; of twelve recent cases two gave positive reactions whilst 13 well-established clinical cases gave positive reactions. It became apparent that the selection of "susceptibles" on clinical grounds was a more satisfactory method.

From the observation of this condition over a period of some years one notes the following facts. The disease has been confirmed on all the principal sheep walks of this county including flocks which have never left the mountain for any temporary period of grazing on the lowlands. During a "bad" season clinical cases are met in most flocks examined. The disease, as previously stated, is subject to marked seasonal variation. It may thus be concluded that the bacilli are very widespread. The degree of clinical and subclinical infection in flocks intermixed and grazing on uniform stretches of open sheep walks varies with, and is related to, the flock type and in enclosed lowland flocks to the nutritional level. Anthelmintic treatment of lambs after weaning—towards Christmas—in flocks with a higher rate case produces a marked reduction in the number of deaths from Johne in these sheep when two years old. During a wet season the case rate increases where sheep graze on peaty sheep walks and decreases where the sheep graze over dry areas; conversely should the season be dry. A high case rate occurs in flocks where draft ewes are purchased for mating with tups of a larger breed and the ewes are retained too many seasons. It is in such sheep that one is better able to appreciate the phase of demineralization associated with the disease. The retention of old breeding ewes in hill flocks produces a sharp rise in case rate among such ewes.

The "early cases" previously recorded which gave no response to johnin were found to be cobalt deficient. Such deficiency occurring in comparatively few members of a flock with no clinical evidence in the remaining sheep does occur and is widespread. Some excellent examples are to be found among the "manufacturing section" of Ministry of Food Grading Centres. Many people have referred to the odd thin sheep amongst a good flock as cases of "sub-clinical helminthiasis." The faeces of such sheep taken whilst grazing on the walks have been monotonously negative. It is from this cobalt-deficient group that the clinical cases arise.

There is some clinical indication that the initial stage of this disease in sheep is not bacterial but a primary phase of "pining." This then is a possible explanation for the negative reaction in "early clinical cases."

The disease in cross-bred lambs follows a rapid course.

The condition is associated with parasitic gastro-enteritis but little or no response is obtained by anthelmintic treatment. Most of us have at some time or another met cases where the flockmaster or shepherd complains that despite anthelmintic treatment some of the lambs are going back in condition, becoming poorer and weaker until death supervenes. They are referred to as a "wrong" or "bad" lot. The onset of bad weather during autumn results in a heavy mortality rate. Because of the preceding phase of unthriftiness the owners have no option but to retain them as they are unsaleable as stores—at least to anyone who knows what he is buying—and the "dead weight" basis is too low. The faeces are uniformly liquid and in the more advanced cases found positive. These, including the animals with positive faeces, respond well to treatment.

The lines of control are thus directed against the individual, flock, and environment. Little can be done in respect of the last, where sheep graze on vast open tracts, other than their removal to lowland pastures before the general flock condition gets too low. In other cases the nutritional level may be improved by reducing the number of sheep or augmenting the supplementary diet. Susceptibles and early cases are culled for treatment and subsequent disposal, fat or store. The weight increase of such sheep, provided

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they are not pregnant, is very satisfactory—50 to 80 per cent. This, of course, does not apply during winter months. The principal factor in relation to hill sheep is that of adjusting the flock type by judicious choice of rams. This is a long-term policy—a process of adjusting the type to prevailing environment, thereby reducing the number of susceptibles. The process of natural selection is too frequently forgotten in our views on disease. Some controlled long-term experiments now in progress will, it is hoped, provide some data on the relationship of sub-clinical infection to type. As previously stated, the removal of sub-clinical infection as denoted by " reactors " is impracticable.

During the treatment of some 250 individual cases the following points have been observed. (Stock bottle prepared by dissolving half ounce cobalt sulphate in half gallon warm water. Dose 10 c.c., repeat six to ten days interval for at least four times.)

The sheep in a matter of days appear more alert with improved head carriage. Appetite improves, as witnessed by the continued grazing in place of former periods spent resting and sheltering from any slight squall or wind. This is noticeable in two to four days. Animals previously disposed to graze over wet areas moved to drier banks and ultimately ceased grazing on the boggy places. It is a well-known fact among shepherds that once sheep become addicted to these places it becomes increasingly difficult to keep them away. Despite daily removal to drier pastures they return.

Range of vision is extended. The animal in a few days is aware of approach of man or dog at a far greater distance than before treatment. Resolution of conjunctivitis is apparent within a short time. The animal becomes harder to catch and the slow ambling gait gradually gives way to a little spurt, and as strength returns becomes as agile as any sheep in the flock.

The abdomen drops and gradually the " tucked up " and empty appearance disappears. For a few days the diarrhoea gets worse, then gradually the faeces become more solid. The period during which liquid faeces are observed after dosing becomes progressively shorter. Faeces in the less advanced cases remain firm after the first dose.

The sub-maxilliary oedema—associated with the " no diarrhoea " group—disappears in two to four days and is accompanied by marked improvement in general appearance and agility of the sheep. The distended abdomen noticed in yearlings becomes reduced and in 28 to 72 hours the flank appears normal. Observations on this flank give some indication of the interval between dosage. Treated sheep begin to shed their wool long before other sheep. The most decrepit are found tupping.

Some Observations on Skin Disease of the Dog*

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When your Committee asked me to read a short paper on Skin Disease I must admit that I accepted very lightheartedly, and it was only when I commenced to gather together a few notes that I realized the many different approaches which can be made to the subject. The time at my disposal is very limited and totally inadequate even to mention, let alone discuss, many of the varied and interesting problems associated with skin disease in general, and I therefore trust you will bear with me in treating the subject somewhat sketchily.

All of us in the course of our daily practice must be consulted frequently by our clients regarding the dog with recurrent dermatitis. I prefer to use the term dermatitis rather than eczema because it is a more general one and lesions clinically identical to true eczema may be caused by such a varied number of factors.

Dermatitis is really an inflammation of the skin caused by an irritant. In mild cases of dermatitis there may be merely a loss of hair (alopecia) which may or may not be accompanied by pruritus. The irritant may, however, give rise to small vesicles or pustules on the skin or, on the other hand, small areas of oedema may develop in the base of the epidermis and finding their way to the horny layers of the skin exude on to the skin surface and cause the formation of an extensive moist lesion.

In dermatitis we should attempt to visualize a battle which has taken place between the skin of our patient and an irritant such as flea infestation, a chemical irritant on the skin surface, or an irritant carried to the epidermis in the blood stream. The sensitiveness of the skin to slight irritants is a very variable factor. Thus in one instance we may have a dog so grossly infested with fleas as to cause emaciation yet no obvious dermatitis arises, whilst in another instance the presence of one or two fleas, as in the case of some fox terriers, may immediately give rise to acute eczema.

I do not propose to bore you with a typical text-book description of parasitic diseases such as sarcoptic and follicular mange, but rather to discuss those cases of recurrent dermatitis which we all meet in practice and which are really due to abnormal sensitiveness of the skin.

In my opinion abnormal sensitiveness of the skin may be hereditary as in some fox terriers, scotties and sealyhams, or it may be acquired. Dermatitis of this type may be divided into two main groups—*viz.*, those cases in which an irritant affects an idiosyncratic skin from the outside, and secondly cases in which the irritant reaches the idiosyncratic skin *via* the blood stream. In practice we frequently meet cases where there is not only an external irritant but an internal cause as well, and successful treatment of course depends upon a correct diagnosis and elimination of the causative factors present.

So far as external irritants are concerned fleas are by far the most important cause of acute dermatitis in dogs with sensitive skins. Diagnosis of fleas is not always easy owing to rapidity of movement of the parasites, but a careful search should always be made for flea excreta which is easily recognizable as small black particles in the hair of the coat. When such particles are present, even if actual parasites cannot be found, appropriate treatment for fleas should always be prescribed. Lice are another responsible factor and the practitioner would be well advised to make a careful search of the skin for evidence of these parasites, their greyish coloration making them difficult to see in a very scurfy coat.

Another external irritant frequently encountered is dirt or sand in the coat due to immersion in sea water, ponds or muddy dykes, or rolling in sand or dirt. In this connection bedding is also of importance and dogs with sensitive skins should not be bedded on sawdust or barley straw, especially if they are confined in a small space and have no exercise or little else to relieve their boredom for long periods. Soap is also a frequent offender and dogs which are susceptible to dermatitis should always be washed in liquid soap in preference to a soft soap, and their skin should be well rinsed afterwards.

So far as internal causes of dermatitis are concerned, reference to a discussion on non-parasitic pruritus by the Central Division[1] shows that there is comparatively little known regarding those factors which in themselves may give rise to dermatitis from within the body, or what is perhaps more important, may increase the sensitiveness of the skin so that comparatively mild external irritants such as fleas may cause acute dermatitis.

As I have already mentioned, there is definitely a breed susceptibility which must be due to inheritance.

In my experience it is seldom easy to discover the exact cause of a dermatitis which from its distribution, course and history is obviously of internal origin.

Diet certainly is of great importance as is often shown by the benefit derived by some cases of dermatitis when a complete change of diet is made. It is well recognized in man that some cases of dermatitis are due to allergy or protein sensitization, fish and other sea foods being the chief offenders. In this connection it is interesting to refer to G. B. Schnelle's description[2] of a method of diagnosing offending foodstuffs in dogs by intradermal inoculation of the skin with extracts of various foods. In his experiment two dogs which were susceptible to dermatitis were used. An area of skin on each dog was shaved, cleaned and a small drop of a food extract was introduced into the dermis by means of a needle. One dog was found to be sensitive to salmon, maize meal, potato, wheat flour and wheat, and the other dog was allergic to rice, pork, salmon and maize meal. Foods giving rise to sensitization need not be very rich in protein. Wheat, however, which we do not classify as a protein food, contains five different proteins. In practice I believe that the foods most frequently giving rise to dermatitis of this type are bread and other wheat products, such as wheat flour, rice and commercial food containing cereals.

Another factor in connection with food is an absence of fat in the diet. Worden[3] refers to an experiment in which puppies born to a collie mother were provided as from weaning with a diet deficient in fat. Dermal lesions developed and when the puppies were three months old the skin became dry and the coats were dry and coarse, flaky desquamation being seen over the whole body. In the treatment of dermatitis it may therefore be necessary to ensure that there is a sufficient supply of fat in the diet. Avitaminosis is another factor which may be associated with dermatitis, vitamin B deficiency giving rise to loss of hair and a variety of skin lesions. Last but not least, mineral deficiency may play some part in some cases of obscure skin disease. Glandular deficiency may also have an influence on the skin—perhaps indirectly through an effect of metabolism, and in this connection alopecia due to thyroid deficiency is well recognized. Similarly dermatitis associated with pregnancy, oestrus or lactation may be due to glandular causes.

* Paper presented to the Eastern Counties Division, N.V.M.A., Autumn meeting at Thetford, November 13th, 1945.

Another internal predisposing cause of dermatitis is toxaemia. I am not exactly sure how toxaemia causes skin lesions, but perhaps toxins circulating in the capillaries of the epidermis increase their permeability or have some effect in liberating histamine. Toxins may also arise from kidney or liver disease or internal parasites—from the bowel in cases of habitual constipation, or from impacted anal glands.

From these remarks it will be seen that there are several very varied factors which may directly give rise to dermatitis, or indirectly give rise to it merely by increasing the sensitiveness of the skin so that mild irritants which normally would have little influence on the skin may produce acute and severe lesions.

The question now arises as to what treatment should be prescribed in a case of recurrent dermatitis. At the outset I would immediately emphasize the necessity for making a correct diagnosis. Every precaution must be taken to ensure that the case is not one of sarcoptic or follicular mange. You are all familiar with text-book descriptions of these diseases, but it must not be overlooked that in a dog with an abnormally sensitive skin, eczematous types of lesions may be produced in both these diseases. In all cases of doubt microscopical examination of skin scrapings should be made, and in the event of failure to demonstrate the parasites the history and course of the dermatitis should be thoroughly considered before the possibility of the existence of either of these diseases is ruled out. Time does not permit my discussing the treatment of mange, but in the light of the foregoing remarks I would like to make one or two observations on the treatment of dermatitis in general.

I will deal first with the treatment of dermatitis caused or aggravated by external irritants. The suggestion that dogs with acute dermatitis should not be washed is in my opinion a fallacy. Sand or dirt in the skin should be immediately removed by bathing. If fleas or lice are present a Derris wash should be prescribed. So far as these parasites are concerned benzene hexachloride is very valuable, as also is D.D.T. Care must be taken to ensure that at the same time kennels and the immediate environment of the patient are thoroughly cleaned and disinfected to prevent reinfestation, and as an extra precaution further applications of the parasiticidal dressings may be adopted.

With regard to the internal causes of dermatitis, diet is of first importance and adjustment should be made along the lines indicated. If the owner can be persuaded to keep a careful record of the actual foods given it may be found possible by experimental omission of certain foods to establish some factor in the diet giving rise to skin sensitivity. Generally speaking, a complete change of diet with an inclusion of fat and foods rich in vitamins and minerals will be of benefit. So far as vitamins are concerned, addition of yeast to the food may be of some benefit and Murnil (Bayer) may be prescribed for its vitamin content. Apart from actual fatty foods, cod-liver oil or small doses of linseed oil are often beneficial in obstinate cases. Toxaemia due to liver, or particularly kidney disease, should be dealt with by appropriate treatment for hepatitis or nephritis as the case may be. Specific treatment for intestinal parasites, relief of constipation and attention to anal glands may similarly prove useful adjuncts to treatment. Salines are of particular value.

From the general point of view, pruritus also may be relieved by bathing in a solution containing sol. picis carb., ½ oz. of the latter preparation being added to one pint of soap lather. In my experience the most suitable application for acute eczematous patches is calamine lotion in which may be incorporated sol. picis carb. and aqua calcis. Internal administration of calcium is often of value for relieving pruritus, as also is the intramuscular injection of 1 to 2 c.c. of a 1 per cent. solution of collargol. I have also observed relief in obstinate cases by the withdrawal of blood and its immediate intramuscular injection into the patient. Sedatives such as luminal or bromides are also of assistance in relieving intense pruritus.

In conclusion I would apologize for my scanty remarks on treatment. Some of you will perhaps be surprised that I have not mentioned, for instance, the arsenical preparations, but I feel sure you will appreciate that the subject of skin disease in dogs is a vast one, and that these few remarks are merely intended as food for thought in promoting what I hope will prove to be a very interesting discussion.

References

1. "Non-parasitic pruritus in dogs—Discussion, Central Veterinary Society. (1945) *Vet. Rec.* **57**. 153-155.
2. Kirk, H. "Index of Diagnosis." p. 397.

The papers read at the conference held in London on February 15th to 17th, sponsored by the Association of Scientific Workers, have been reprinted by the Temple Fortune Press and issued under the general title "Science and Human Welfare," price 2s. 6d.

Organo-mercury Compounds in Veterinary Medicine

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Several private communications have been received to the effect that organo mercurials have an extraordinarily rapid curative action upon fungoid skin diseases and bacterially infected wounds. The phenyl mercury derivatives are particularly effective in this respect, far surpassing complex mercurials such as mercurochrome and the old established remedies—mercuric chloride, iodide and ammoniated mercury. Phenyl mercuric chloride, for example, applied as a spirit lotion (1:500) has an excellent effect and is unlikely to cause any untoward reaction. Continued medication even for several days should be perfectly safe.

I am indebted in the first instance to Mr. John Brennan, M.R.C.V.S., who kindly brought this matter to my notice, and it was through him that contact was established between myself and Mr. FitzGibbon, F.R.I.C., of Lunevale Products, Ltd., Lancaster, who has for many years devoted himself to research in this specialized field of organo-metallic chemistry. Whilst the organo-mercury compounds are well established as horticultural and industrial bactericides and fungicides, and have more recently been advocated for the treatment of human dermatoses, no reference to them seems to have appeared in veterinary literature.

The first suggestion that phenyl mercury compounds could be used with safety in the treatment of human skin diseases is due to Weed & Ecker[1] and Birkhaug[2], who, from 1931 to 1933, published accounts of their work upon the action of phenyl mercuric acetate and nitrate as bactericidal agents and showed that although these compounds were bactericides of an extremely high order, they were relatively non-toxic to animals and did not interfere with biologic and immunologic processes in the body.

In 1935, Biskind[3] published a survey of these earlier investigations and confirmed that phenyl mercuric nitrate possessed a very high bactericidal potency with a low local and systemic toxicity for animals and man.

In 1941, Dr. E. A. J. Byrne, M.R.C.P., working with Mr. FitzGibbon (private communication) successfully treated a number of cases of a persistent staphylococcal rash in infants with a 0·25 per cent. phenyl mercuric chloride ointment. Byrne subsequently extended his work, with excellent results, to the treatment of a number of cases embracing both fungus and bacterial infections of skin and wounds. After joining the R.A.M.C. in 1942, Dr. Byrne pursued his researches, in India, with phenyl mercury derivatives for the treatment of tropical mycotic diseases. His results aroused the interest of the Army Medical Directorate and permission was granted for him to publish a paper in the *Indian Medical Gazette*.[4] The general conclusions reached were, after treating a very large number of both white and native troops, that phenyl mercury compounds in ointment and lotion form were extraordinarily effective. All types of yeast fungi and bacteria were rapidly destroyed in the presence of relatively low concentrations of these mercurials.

The phenyl mercury compounds have an action many times greater than the well-known corrosive sublimate (mercuric chloride), but, unlike this inorganic salt, they are not inactivated in the presence of pus, serum or body fluids. They do not precipitate proteins and are vesicant only at concentrations many hundreds of times greater than they are bactericidal.

Staphylococcal and streptococcal organisms are killed at concentrations of the order of 1 in 50,000 to 1 in 200,000. Growth of these organisms is inhibited (and this is an extremely useful characteristic of mercurials) at concentrations as low as 1 in several million. *Bacillus subtilis* is destroyed at 1 in 75,000 and inhibited at 1 in 1,000,000.[5]

American medical literature contains many references to the use of the phenyl mercury compounds.[6, 7] Phenyl mercury borate and nitrate have been used extensively during the late war for the preservation of sterile solutions for intravenous injection as well as dried blood plasma at 1 in 50,000.[8] The nitrate has even been advocated for use in contraceptives.[9]

With regard to toxicity, the phenyl mercury salts are very much safer than mercuric chloride. From experiments which have been conducted (private communication[10]), it is fairly safe to state that if a cat or dog licked or absorbed the amount of mercurial present on the body in the case of gross medication, toxic symptoms would be most unlikely to appear. Of all the phenyl mercury salts, the chloride is the safest and most effective to handle.

In the treatment of tropical mycotic infections, Dr. Byrne found that a 0·2 per cent. phenyl mercuric chloride ointment, spread upon lint and allowed to remain on the lesion for longer than four hours, occasionally caused vesication. The procedure which he found completely effective for these infections was to apply a 0·2

per cent. ointment and allow this to act for not longer than three hours. After removing the lint, and swabbing the area, the infection cleared up spontaneously *without further treatment.*

Any suggestion that ringworm could be cleared up in one application of any agent left me very sceptical. However, a supply of 0·25 per cent. phenyl mercuric chloride ointment was obtained and cases of ringworm were anxiously awaited. Eventually a Scottish terrier was brought in which had received treatment elsewhere for supposed mange, but without the slightest curative effect. About 16 circular lesions, absolutely typical in all respects, of ringworm were observed. Microscopical examination of hair shafts and bulbs left little doubt. The lesions were increasing in size and numbers. At once the ointment was applied locally, the owner being instructed to wash it off after three hours, and reapply the following day if necessary; also to watch for fresh lesions and treat them in the same way.

In due course I received the following letter: "I washed off the ointment applied by you (on the dog's back) after three hours as instructed. The next day I found that the ringworm was so widespread on all parts of the dog that I decided to clip off all hair except that between muzzle and eyes. This left the dog virtually naked. I then applied the ointment all over the dog. This application was *not washed off* at all as I had found that a small test area, left unwashed from the first application, had not blistered the skin. There were well over 50 lesions most of which were treated with one application of ointment left on to dry off like scurf (unwashed). On the area which had a second application (the first by you—washed off, the second by me—unwashed) there appeared three small areas which blistered. The cure was quite successful. Most places had one application, not washed off. The dog suffered no ill effects with the skin completely covered with ointment which was left on. All collars, leads, etc., were soaked in hot Jeyes' Fluid and the kennels scrubbed daily with chloride of lime, and the walls sprayed with Jeyes' Fluid for a week. It seems to me that if reinfection is eliminated, this treatment is a successful one-application cure. The inflamed portion of skin peeled off and had a normal appearance after three or four days. Hair grew normally, but blistered parts remained hairless for several days more, after which hair grew."

This severe and typical case in a dog, when reviewed along with the reports of success in humans, leads one to suppose that a specific against ringworm in animals is at last available.

References

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[5]Armangue & Maestross. (1934.) *Arch. Med. Cirug.* **37.** 1074.
[6]*J. Amer. med. Ass.* (1941.) **117.** 1784.
[7]New and Non-official Remedies. (1943.) American Med. Assoc.
[8]*American Perfumer.* (1943.) **45.** 29. Aug.
[9]Ranson & Tynen. (1938.) *Lancet.* **235.** 882.
[10]FitzGibbon. Private communication.

H.M. STATIONERY OFFICE PUBLICATIONS

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Health, Ministry of: Whole-time Public Health Medical Officers, Salaries of Interim Revision of Askwith Memorandum	0 2	0 3

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A model of what is thought to be the first aircraft—a helicopter—ever to be specially designed for agricultural work was on view recently at the works of Pest Control, Ltd., Harston, Cambs. Capable of carrying three to four tons and travelling from field to field at 80 m.p.h., it will be used to spray chemicals against many insect and fungus pests. It will be possible with one machine to cover between 400 and 500 acres a day. The new helicopter is called the Spraying Mantis, and across its 90 ft. span will be 100 nozzles capable of spraying 50 gallons per acre.

CLINICAL COMMUNICATIONS

"Hypo." in Arsenical Poisoning in Cattle

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[Arsenical poisoning—important in tick-ridden Africa—may be of less significance to British stock owners, especially as D.D.T. and Gammexane come forward, but the following cases are reported for general interest, especially from the rare feature that the patient in the second case could actually describe the effects. The work at Onderstepoort drew attention to the usefulness of "hypo." in cases of arsenical poisoning.]

A large estate kept six pedigree shorthorn and Friesian bulls, one of which was found dead and another seemed sick at first examination by the staff one morning. Blood slides were sent to the local veterinary officer to exclude anthrax or East Coast fever. The examination of the films revealed no parasites in the blood of either animal. The second bull, which gave a history of apparent "colicy" pains and passage of dark liquid faeces, died next day. The manager brought specimens of liver, abomasum, spleen, lymphatic glands, etc., to the veterinary officer and from these arsenic was recovered.

As two more bulls became sick, with pain and scouring bloody faeces, a visit was made to the farm and intrajugular injections of sodium hyposulphate in distilled water were given. The owner was advised to drench the animals every two hours with 2 oz. of "hypo." in 10 oz. of water until they recovered. The other bulls were also dosed twice in case of possible delayed poisoning arising in them. The sick bulls recovered.

Despite insistence that the bulls could not possibly have had access to arsenic during the previous ten days, enquiries revealed that arsenical dip in powder form had been used until three years previously and had always been kept on one shelf of the store. A native clerk had been instructed by the manager to sweep out the office and store. He had removed the powder but claimed that the sweepings were collected and given to a yardboy to bury. It is probable, however, that these instructions were not carried out.

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Presumptive Arsenical Poisoning in a Human

J. W. MACAULAY, B.SC., M.R.C.V.S., D.V.S.M.

The patient was the writer, who suffered from a tendency to abdominal pain which he kept in check by small drinks of milk every two hours or as the need arose. On one occasion the usual bottle was rejected in favour of a flat 8 oz. bottle with bakelite screw stopper which had arrived at the office containing an arsenical dip sample for test of strength. The bottle was thoroughly washed before use.

The milk was not consumed until about 5 o'clock. At 2 a.m. violent abdominal pain was experienced and every hour or so further bouts of "internal fire" and a definitely "scalding" diarrhoea occurred. About 10 a.m., during a bout of "arsenical remorse" as described above, memory awoke of the previous day's risk and about one drachm of "hypo." in water taken. The relief was instant. Four or five times thereafter during the day—at about two-hour intervals—the writer experienced a bout of colic and diarrhoea of the painful, scalding type. Each time the same dose of "hypo." produced the really remarkable instantaneous cessation of pain—the whole gut seemed to be soothed and the feeling of imminent diarrhoea dispelled. The fifth dose completed the "cure."

It is suggested that the stopper of the bottle, which had a very flabby type of washer, may have held enough arsenic to cause poisoning.

ROYAL SOCIETY OF MEDICINE

Sir Maurice Cassidy was elected President of the Royal Society of Medicine at its annual meeting last week. Group Captain Antoni Fiumel, late Director-General of Medical Services, Polish Forces, and Colonel Carel Koch, late Director-General of Medical Services, Netherlands Forces, were presented with diplomas of honorary fellowship. Similar diplomas are being presented to Colonel Lorne Montgomery, Royal Canadian Army Medical Corps, and Colonel William Middleton, United States Army Medical Corps, by the retiring President, Sir Gordon Gordon-Taylor, during his tour of the United States and Canada.

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Weekly Wisdom

We must learn to disagree without being disagreeable.—Sir Alexander Cadogan.

QUESTIONS IN PARLIAMENT

Armed Forces (Medical, Dental and Veterinary Officers)

Squadron-Leader Kinghorn asked the Secretary of State for War whether he will now make a statement about the pay and retired pay of officers of the medical, dental and veterinary services of the Armed Forces.

Mr. Lawson: The Government have given careful consideration to the pay and conditions of service of medical, dental and veterinary officers. As regards medical and dental officers they have decided that, from July 1st, 1946, there will be a common scale of pay and time promotion in each of these two branches in all three Services. Officers will be appointed in the rank of acting surgeon lieutenant, R.N., lieutenant or flying officer, and promotion will be by time to surgeon lieutenant R.N., captain or flight lieutenant after one year, and to surgeon lieutenant-commander, major or squadron-leader after eight years. Thereafter promotion will be by election. Rates of pay will be as follows:—

Medical Officers

Approx. Age	Service	Rank	Pay (Daily) s. d.
25	On appointment ..	Acting Surgeon Lieutenant R.N., Lieutenant, or Flying Officer	22 0
26	After 1 year's service	Surgeon Lieutenant R.N., Captain or Flight Lieutenant	28 0
28	„ 3 years' „	„	31 0
30	„ 5 „ „	„	34 0
32	„ 7 „ „	„	37 0
33	„ 8 „ „	Surgeon Lieutenant-Commander, Major, or Squadron-Leader	43 0
35	„ 10 „ „	„	46 0
37	„ 12 „ „	„	49 0
39	„ 14 „ „	„	52 0
		Surgeon Commander, Lieutenant-Colonel or Wing-Commander (on appointment)	58 0
		„ after 2 years ..	61 0
		„ „ 4 „ ..	64 0
		„ „ 6 „ ..	67 0
		„ „ 8 „ ..	70 0
		Surgeon Captain R.N., Colonel or Group-Captain (on appointment)	75 0
		„ after 2 years	78 0
		„ „ 4 „	81 0
		„ „ 6 „	84 0
		Surgeon Captain R.N. (after 8 years as such), Brigadier, or Air-Commodore ..	87 0
		Surgeon Rear Admiral, Major-General or Air Vice-Marshal	110 0
		Surgeon Vice-Admiral, Lieutenant-General or Air Marshal	135 0

Dental Officers

Approx. Age	Service	Rank	Pay (Daily) s. d.
25	On appointment ..	Acting Surgeon Lieutenant, R.N., Lieutenant or Flying Officer	20 0
26	After 1 year's service	Surgeon Lieutenant, R.N., Captain or Flight-Lieutenant	25 0
28	„ 3 years' „	„	28 0
30	„ 5 „ „	„	31 0
32	„ 7 „ „	„	34 0
33	„ 8 „ „	Surgeon Lieutenant-Commander, Major or Squadron-Leader	40 0
35	„ 10 „ „	„	43 0
37	„ 12 „ „	„	46 0
39	„ 14 „ „	„	49 0
		Surgeon Commander, Lieutenant-Colonel or Wing-Commander (on appointment)	55 0
		„ after 2 years ..	58 0
		„ „ 4 „ ..	61 0
		„ „ 6 „ ..	64 0
		„ „ 8 „ ..	67 0
		Surgeon Captain R.N., Colonel or Group-Captain (on appointment)	72 0
		„ after 2 years	75 0
		„ „ 4 „	78 0
		„ „ 6 „	81 0
		Surgeon Captain R.N. (after 8 years as such), Brigadier or Air-Commodore ..	84 0

It is intended to continue the arrangement under which a medical or dental officer who is commissioned after holding an approved whole-time appointment in a recognized civilian hospital may be granted an ante-date of seniority. In future, however, there will be a common rule for all three Services and the ante-date, which will count towards the service qualifying for increments of pay and for promotion to the rank of Major or equivalent in the other Services, will take effect on completion of 12 months' service.

The arrangements for the encouragement and reward of specialization are still under consideration.

Veterinary officers are not employed in the Navy and R.A.F. In the Royal Army Veterinary Corps officers will be appointed in the rank of lieutenant, and there will be time promotion to captain after two years and major after ten years. Promotion to higher rank will be by selection. Pay will be as follows:—

Approx. Age	Service	Rank	Pay (Daily) s. d.
25	On appointment ..	Lieutenant	20 0
27	After 2 years' service	Captain	22 0
29	„ 4 „ „	„	25 0
31	„ 6 „ „	„	28 0
33	„ 8 „ „	„	31 0
35	„ 10 „ „	Major	37 0
37	„ 12 „ „	„	40 0
39	„ 14 „ „	„	43 0
41	„ 16 „ „	„	46 0
		Lieutenant-Colonel (on appointment) ..	52 0
		„ after 2 years ..	55 0
		„ „ 4 „ ..	58 0
		„ „ 6 „ ..	61 0
		„ „ 8 „ ..	64 0
		Colonel (on appointment)	69 0
		„ after 2 years	72 0
		„ „ 4 „	75 0
		„ „ 6 „	78 0
		Brigadier	81 0

Service retired pay and gratuities

The new general scheme of service retired pay and gratuities for Regular officers, details of which are given in Appendix III of the White Paper, Command 6750, will also apply to permanent Regular medical, dental and veterinary officers who were serving on the active list on December 19th, 1945, or who are commissioned after that date. There will be some adjustment on the lines of existing arrangements, for Naval medical officers who retire with less than 25 years' service after having received the special gratuity of £1,000 which was payable under the old code.

Medical, dental and veterinary officers who are now serving with permanent Regular commissions will, like other officers, remain eligible, if to their advantage, for awards under the regulations now superseded, instead of the new terms. (See paragraph 67 of Command 6750.)

Officers who retired with retired pay before December 19th, 1945, and who served during the war, will be allowed reassessment of their retired pay in respect of their war service under the terms of the scheme which I announced in the House on April 15th.

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Livestock (Feeding-stuffs)

Sir T. Moore asked the Minister of Agriculture in view of the proposed reduction in animal feeding-stuffs, what steps are being taken to ensure that farmers will not endeavour to maintain more animals than they can feed with due regard for humanitarian considerations.

Mr. T. Williams: I hope that farmers will adopt a more severe culling policy than usual, not merely for the considerations referred to by the hon. and gallant Member, but because they will by this means secure the maximum output of milk, meat and eggs from the limited supplies of feeding-stuffs available next winter. I am now considering, in collaboration with my right hon. Friends the Minister of Food and the Secretary of State for Scotland, what positive encouragement can be given towards this objective.

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Paper Supplies

Mr. Assheton asked the President of the Board of Trade whether, in view of the improvement in the paper position expected at the end of July, he will relax the restrictions at present in force with regard to new entrants into the book publishing trade.

Mr. Belcher: No, Sir. I regret to say that the paper supply position continues to be difficult and no improvement is expected in the near future.

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U.N.R.R.A. (Livestock Purchases)

Mr. Vane asked the President of the Board of Trade U.N.R.R.A.'s policy in purchasing livestock in this country; their target for purchases over the next 12 months; and to which countries it is intended that the livestock so purchased shall be sent.

Mr. Marquand: I am informed by U.N.R.R.A. that their general policy is to purchase breeding stock rather than commercial stock and to concentrate mainly on animals which do not compete with human beings for grain. In reply to the second and third parts of the Question, I am informed that my right hon. Friend the Minister of Agriculture has agreed with U.N.R.R.A. the maximum numbers of various types that can be made available from this country. Within these totals and quantities, the numbers that go to each of the recipient countries are settled by discussion between U.N.R.R.A. and representatives of the country concerned.

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Metopryl (n-propyl methyl ether) is a new surgical anaesthetic, less irritating, with less disagreeable after-effects and more power than ether. It gives more pronounced muscular relaxation with equal safety in long operations and has a pleasant odour. Metopryl was developed by Dr. John C. Krantz, School of Medicine, University of Maryland.—*J.A.V.M.A.*

NOTES AND NEWS

Diary of Events

July 18th.—Royal College of Surgeons, second Charles Tomes Lecture, by Sir Frank Colyer. (See Notices.)

July 19th.—Meeting of the Yorkshire Division, N.V.M.A., at Leeds University, 1.30 p.m.

July 19th.—Meeting of the Biochemical Society in Edinburgh (Department of Biochemistry, University New Buildings, Teviot Place), 10.30 a.m.

July 23rd.—Annual General Meeting of the Southern Counties Division, N.V.M.A., at Winchester. (See Notice.)

July 24th.—Summer Meeting of the Eastern Counties Division, N.V.M.A., at Cambridge (Institute of Animal Pathology), 11 a.m.

July 24th.—Meeting of the Western Counties Division, N.V.M.A., at Launceston (White Hart Hotel), 2 p.m.

July 25th.—Special Meeting of the Scottish Branch, N.V.M.A., at Edinburgh (The "Dick" College), 2.30 p.m.

July 26th.—Meeting of the Mid-West Division, N.V.M.A., at Sherborne, Dorset.

July 26th.—Meeting of the Royal Counties Division, N.V.M.A., at the Royal Veterinary College, Streatley, 11 a.m.

July 31st.—Joint Meeting of the Section of Comparative Medicine, (Royal Society of Medicine) and the Central Veterinary Society, at 1, Wimpole Street, W.1, 5 p.m.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

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Government of Burma

The Government of Burma is advertising a number of vacancies in its Veterinary Department. The Association has been unable to accept for insertion in *The Veterinary Record* an advertisement of these vacancies because the scale of salaries offered and certain of the terms of appointment are regarded as unsatisfactory. Members of the profession who may be inclined to apply for these posts are consequently advised in the first instance to communicate with the General Secretary, N.V.M.A.

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Rubber Boots

After consultations with the Board of Trade, the Ministry of Agriculture is now authorized to issue to veterinary surgeons engaged in agricultural practice, coupon equivalent documents in respect of rubber boots.

Any veterinary surgeon who is in practice in England or Wales, and who requires such a document should, therefore, furnish the Ministry, at *99, Gresham Street (1st Floor), London, E.C.2*, with a declaration, similar to that which is required in respect of documents for certain other articles of protective clothing. The declaration should be as follows:—

"I.....a veterinary surgeon engaged in agricultural practice at.....hereby declare that I require for my own use in my agricultural practice one pair of rubber boots (knee length).

Signed.....

Veterinary surgeons engaged in agricultural practice in Scotland should make application to the Department of Agriculture for Scotland, St. Andrew's House, Edinburgh, 1.

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PERSONAL

Birth.—Dye.—On June 17th, 1946, to Barbara (*née* Cousins), wife of R. W. Dye, M.R.C.V.S.—a son.

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Marriage.—Tayler—Currie.—On Monday, July 1st, 1946, at London Road Congregational Church, Lowestoft, Mr. Reginald C. Tayler, Royal Army Veterinary Corps, younger son of Mr. and Mrs. Hosking Tayler, of Richmond, Surrey, to Margaret Kerr Currie, elder daughter of John Magee Currie, M.R.C.V.S., of Lowestoft. The best man was Mr. Dennis A. Walker, M.R.C.V.S., of the Colonial Veterinary Service.

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Will.—Mr. Brinley Sayer, M.R.C.V.S., of 17, Woodville Road, Newport, left £38,753 (net personalty £38,555). Mr. Sayer left all to his mother, and afterwards numerous bequests, including one-tenth to the Royal College of Veterinary Surgeons.

NATIONAL VETERINARY SERVICE FOR NEW ZEALAND

A national veterinary service for New Zealand is to be established under legislation to be introduced during the coming session of Parliament, states the Department of Industries and Commerce Official News Letter, which continues: If the current proposals are put into effect a central council will be set up with the following representation: Government (2), Dominion Federation of Farmers' Veterinary Services (2), Dairy Board (2), Meat Producers' Board (1), Wool Board (1), Veterinary Association (1).

The function of the council will be to organize efficient veterinary services for all the livestock owners of the Dominion. It will have complete control of central funds to be provided by a levy on animal products subsidized by the Government, probably at the rate of £1 for £1.

The council will encourage the formation of more veterinary clubs, to which it may grant subsidies to ensure their stability. It will endeavour to ensure that sufficient veterinarians are trained, and to that end it may grant bursaries to selected students. It will seek to promote the fullest possible collaboration between all interested organizations with a view to increasing the efficiency of animal husbandry, and it may appoint officers to arrange for extension work in animal health and production.

It is expected that the scheme will broadly follow the recommendations made in the majority report of the Veterinary Services Committee last year. That report suggested the following basis for the levies: 400,000,000 lb. of butterfat at 0·02d. per lb., £33,333; 1,000,000 bales of wool at 1d. a bale, £4,667; 12,000,000 fat lambs at ¼d. a head, £12,500—total £50,500. A £1 Government subsidy would raise the total to £101,000.

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THE VETERINARY EDUCATIONAL TRUST

Dr. J. B. Polding, M.R.C.V.S., has been awarded a Wellcome Veterinary Research Fellowship to undertake work upon the Metabolism of *Brucella abortus*, the causal organism of bovine contagious abortion.

Dr. Polding, who has previously carried out investigations in Malta and in India upon undulant fever in man and bovine abortion, will take up his research fellowship with the Trust on October 1st, 1946. He will work in the Biochemistry Laboratories at Oxford, under the supervision of Professor R. A. Peters, F.R.S., and Dr. D. D. Woods.

The award of this Fellowship brings the total of research awards made by the Trust to nine. The problems being investigated include a story of structure and function in domestic animals, worm infestations of equines, staphylococcal infections of animals, blowfly problems of the sheep, contagious bovine abortion, resistance of animals to parasitic infestation, and equine infertility. It is hoped shortly to appoint a further Fellow to work upon animal nutrition.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Anglesey.—Pant Bach, Llandegfan, Menai Bridge, Anglesey (July 6th).

Midlothian.—Easter Drylaw Farm, Davidsons Mains, Edinburgh, Midlothian (July 6th).

Sheep Scab:

Cumberland.—Inglewood Edge, Sowerby Row, Carlisle, Cumberland (July 3rd).

Westmorland.—Helton, Penrith, Cumberland (July 4th).

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IMPERIAL AGRICULTURAL BUREAUX REVIEW CONFERENCE

The Imperial Agricultural Bureaux are centres of information covering twelve branches of science in its application to agriculture, livestock and forestry. They are not organized to serve the farmers directly. Their purpose is to aid scientific officers and the Departments of Agriculture in all countries of the Empire, and agricultural research institutes situated in those countries. They thus have a common inter-Imperial service to perform. They are financed and organized by all the Governments of the Empire jointly on a basis agreed amongst them. Their control is vested in an Executive Council composed of representatives appointed by those Governments. The work of the Council and of the Bureaux comes periodically under review at a special conference attended by representatives of all parts of the Empire. Such a conference was due to be held in 1941, but had to be postponed until this year owing to the

war. The conference was opened in June in South Africa House and scientists from all the Dominions and Colonies were present.

The Earl of Huntingdon, Parliamentary Under-Secretary, Ministry of Agriculture, in the course of his speech in welcoming the delegates, said that he would like to mention briefly the present position of the Bureaux, and continued: "There are now twelve centres of information. Each deals with a branch of science, in its bearing on the management of land, crops, livestock and forestry. During the long period since the last conference, work has been going on uninterrupted, but often during the war years under extreme difficulty. Scientists, research institutes and departments in all countries of the Empire are still anxious to keep abreast with all that is happening in other parts of the world in their own particular sphere of science. It is obviously impossible for research workers in any one country to keep in touch with every development throughout the whole of the Empire. The Bureaux, therefore, continue to provide a most valuable clearing house for information of all the latest advances in agricultural science. The need for this work was never greater than to-day.

"In this war against hunger the work of the scientist is of the utmost importance. The necessity of preventing pests and diseases which attack our crops and livestock is essential, and in order to achieve this every country in the Empire must be kept fully informed of new developments and of any new discovery in the technique of agricultural production. . . . Whilst the Bureaux exist to serve primarily the scientists of the various research institutes and agricultural departments, the knowledge gained ultimately reaches the individual farmer. . . . Agricultural science is absolutely dependent on the sort of service the Bureaux provide. Indeed, agricultural scientists would hardly be able to carry on without these facilities. We, in this country, are fully alive to the need for strengthening the scientific service for agriculture and expanding as fully as possible our research facilities. You will, I am sure, be interested to know that the Agricultural Research Council of Great Britain and the agricultural departments in conjunction are planning a comprehensive extension of research facilities in various fields as an essential part of our agricultural policy. This growing emphasis on research means, therefore, that the value of the Bureaux to this country will continue to grow.

"I should like to refer to three developments of particular interest which have taken place since the last conference in 1936. As the 1941 Review Conference could not be held the Executive Council felt that it was advisable to have some outside scrutiny into the work of the Bureaux. A strong Committee was formed under the chairmanship of the Rt. Hon. Lord Hankey which included among its members Sir Henry Dale, who was at that time President of the Royal Society; Sir Thomas Holland, Principal of Edinburgh University, and other leading scientists. They prepared a most valuable report which I see is one of the main subjects to be discussed at this conference. I should like to take this opportunity of expressing the Government's thanks and appreciation to Lord Hankey and his Committee for their kindness in devoting their time to this work in addition to their many other war-time duties.

"The second development concerns the growing international reputation of the Bureaux. So great is now their reputation that the Interim Commission of the Food and Agriculture Organization of the United Nations has named the Bureaux as one of the existing information services. It does such extensive, valuable and outstandingly good work that it recommends that the Food and Agriculture Organization should explore the possibilities for extending those services to parts of the field which are not now covered by them.

"And thirdly, with this Review Conference there will be sitting in London two other British Commonwealth Scientific Conferences, one organized by the Royal Society and the other composed of official representatives of Government Scientific Departments. The scope of both these conferences is, of course, much wider than this one, but neither of them has the task of examining in detail the work of existing inter-Imperial organizations. Their recommendations or conclusions, however, may have a bearing on the work of the centres under your Executive Council in which case this conference will, of course, bear in mind their deliberations."

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Combating Malnutrition

The conference continued its sessions at Oxford where, on the subject of malnutrition, Dr. E. H. Cluver, Director of the South African Institute for Medical Research, said that out of 11,000,000 Africans in the South African Union the authorities were unable to find 250,000 required for the Union's gold mines because of poor physique caused by malnutrition. More than half of the native labour force required for the gold mines had to be recruited from beyond the borders of the Union. It was sound business to spend big money on combating malnutrition, which was principally due to the natives' unbalanced starchy diet, consisting chiefly of porridge.

Dr. B. S. Platt (Colonial Office) said that medical research workers had been accused by agriculturists of having failed to improve nutrition in colonial territories. For immediate purposes in colonial territories he urged improvement of food processing, the widespread use of fertilizers (giving increased crop production) and the examination of incentives to production.

Mohammed Afzal Hussain, of the Government of the Punjab, said that at least 33 per cent. of the people of India had not enough to eat. In parts of the country where the density of population was high and the availability of protein foods low, the stature of human beings was going down. If that continued there might be all at once a tremendous death-rate.

Sir Edward Mellanby suggested that the whole problem of malnutrition might be the subject of an Empire plan.

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ROYAL SOCIETY EMPIRE SCIENTIFIC CONFERENCE

Animal Diseases

At the morning session of the Conference, at Cambridge, on June 28th, Mr. R. Daubney, speaking on the above subject, said he saw a danger of rabies being introduced into this country because of the disregard of quarantine regulations. He cited an example of an officer returning from Africa with a dog which later developed rabies, with fortunately no human mortality, but 14 people were put to the inconvenience of anti-rabies inoculation. He also cited instances of the vectors of rickettsial disease failing to transmit infection, but later proved to be efficient vectors. There were apparently other factors, apart from the known ones concerned in the transmission of diseases—*e.g.*, *Typanosoma vivax* was present in Mauritius in the absence of the tsetse fly. The tsetse fly was attracted to trains, planes, and any moving body, and in a period of three months nearly 4,000 tsetse flies were removed from trains passing from one endemic to a non-endemic area.

Dr. J. Du Toit emphasized the close relationship between medical and veterinary science, and cited numerous instances of counterparts between animal and human diseases—*e.g.*, in the U.S.A. when an attempt was made to eradicate tuberculosis 4,000,000 infected cattle were killed. In South Africa anthrax was once a serious and common disease among humans. Now, after the compulsory vaccination of sheep and cattle, this area had been cleared, and there had been no deaths from this cause during the past two years. Similarly, sleeping sickness in animals and human beings was identical, and, contrary to our accepted ideas, this disease can be transmitted by many species of the tsetse fly. He called for close co-operation and mutual assistance between the veterinary and medical services.

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NEW MERCURIAL ANTISEPTIC

An organic mercury compound, 2-acetoxy-mercuri-4-diisobutylphenol, known under the trade name "Merbak," has been tested for bactericidal activity by Heinemann and Blanchard (*J. Amer. Pharm. Assoc.*, 1946, **35**, 54). It was found to be active against *S. aureus*, *E. typhosa*, *Esch. coli*, *Str. haemolyticus*, and *Dip. pneumoniae* in concentrations which varied from 1 in 10,000 to 1 in 30,000 (*Dip. pneumoniae*), against *Ps. aeruginosa*, 1 in 3,000, all at 20° C. It was active in serum broths. Moreover, it proved to be fungicidal against *Tr. rosaceum* in a dilution of 1 in 1,000, and inhibited the growth of this fungus in a dilution of 1 in 30,000. Its toxicity to rats and chick embryos is said to be low, and it is claimed to be non-irritating to the skin.—*Pharm. J.*

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SILAGE OR COWMEN?

A comment that will interest many practitioner farm visitants is made by the Editor of the *Farmers' Weekly*, who writes, under the above heading, "Exactly why some silage pervades the whole farm with a most objectionable stink, while other silage, perhaps from the same material, has either no smell worthy of notice or a sweet tobacco-ish odour, I have never been able to fathom. It is debatable whether the strong-smelling stuff taints milk. But it certainly 'taints' cowmen.

"In one case a farmer who formerly pinned a lot of faith to his silage has given up making it altogether. So tainted were the cowmen that their wives put their feet down hard. The smell got into the men's clothes and was noticeable all over the house. And cowmen's wives having a big say in matters, the farmer concerned lost three cowmen in quick succession. It was silage or cowmen and he chose the cowmen."

MINISTRY OF AGRICULTURE NEWS SERVICE

Self-sufficiency on the Farm.—The recent announcement of drastic reductions in feeding-stuffs rations makes it essential for farmers to put into practice as much self-help as possible. Never has the need for self-sufficiency on the farm been greater than it is to-day. A year or so ago many farmers had every reason to think that some of their feeding troubles would at least decrease. Now they find that they are increased, and plans must be adjusted to meet the new conditions. From its very nature agriculture must plan a year or more ahead, and of all the industries, it is the one most likely to be affected by the arrival and explosion of any economic bomb. In world conditions at present it would require more than human powers to forecast with reasonable accuracy this country's food position a year or 18 months ahead. The best that could be forecast would be "Hope for the best, but prepare for the worst." If the world's food position still further deteriorates—the worst is yet to come.

Although there is now only limited scope to provide on the farm extra crops for stock, it is not too late to wage with the utmost effort a "Care of Crops and Anti-Waste Campaign." Such a campaign to ensure the best yields from every crop now growing will require a careful harvesting, good and timely thatching, careful threshing of cereals; a supervision that will do much to make every handful of grass into a wisp of good hay; a utilization of the aftermaths as silage for winter food. It is a campaign that calls for extra care in the mixing of all rations and above all in the feeding of dairy cows according to their yields, for no farmer can afford to keep a cow that is not paying for her board and lodging. This emphasizes the value of milk recording so that accurate knowledge is available of the cow's yield. Over the whole farm it means keeping an eye on what must be done and on what must not be done. For next year it will be necessary to plan now a campaign of self-sufficiency that will ensure that every square yard of ground is utilized in the production of home grown food, even to a greater extent than it did in the years 1941 to 1944.

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Phosphate Off the Ration.—Of the three main classes of fertilizers, *i.e.*, nitrogen, phosphate and potash, only nitrogen has, for some time past, been free from control as regards the purchase and use of supplies by farmers. The phosphate supply position has now improved and in consequence the Ministry has decided to discontinue as from July 1st the permit scheme now in force in respect of phosphatic fertilizers, and at the same time to remove the present restriction on the application of phosphate to grassland. It is necessary, however, that these fertilizers should continue to be used efficiently and to the best advantage from the viewpoint of the production of essential foodstuffs.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

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PASTEURIZATION OF MILK

Sir,—War can excite passion, but it takes something fundamentally controversial such as the pasteurization of milk to arouse the English people to heights of Gallic inspiration or Celtic oratory.

This was exemplified in the classic debate in the House of Lords between Lord Rothschild on the one hand and the Lords De La Warr and Bledisloe on the other hand, as fully reported in *The Veterinary Record* of April 20th, 1946. Lord Rothschild spoke for the machine age; the other two, and especially Earl De La Warr, seemed to speak more for what is left in Britain of rural or natural instinct.

The debate ended in happy compromise on a high note of common sense wherein the honours were with De La Warr. Lord Rothschild had a clever and eloquent brief but he spoiled it for the House of Lords by seeming to sneer at nature* in such passages as: "If one were fortunate enough to get hold of a steak in the future one must not tamper with nature by cooking it." Witty, perhaps, but a misleading and mistaken simile, as many a veterinarian knows.

Here in Tasmania, as elsewhere, it is the custom to wean calves at birth or in a day or two, and to rear them on the bucket with separated milk. Exceptionally, but not rarely, a calf is left on the cow and both are turned out to grow and fatten simultaneously. The morbidity among the weaned calves up to a year old is generally high and sometimes is disastrous, especially from parasitism of stomach, intestines and bronchi.

On the contrary, in more than five years of intensive farm veterinary practice in Tasmania, I have never known a calf on the cow, locally termed a "vealer," to suffer from any malady. It is, of course, established that the colostrum is rich in antibodies that would be destroyed or vitiated by heat or storage and it seems not unlikely that some such antibodies or protective substances remain throughout the lactation.

This certainly seems to be true in relation to parasitism and haemorrhagic septicaemia. It could be true of tuberculosis. Research on calves would be necessary to show whether as much immunity as the "vealer" naturally enjoys could be given to calves fed regularly with stored pasteurized milk for a year from birth. That is, pasteurized milk stored for 48 hours subsequent to milking.

Yours faithfully,

Scottsdale, Tasmania. J. W. Rainey.
June 16th, 1946.

* Those who sneer at the nature school of thought are invited to explain, *inter alia*, the recent marked increase in disease of the heart and arteries among persons between 45 and 55 years. Why has the age-incidence for this cause of mortality recently slipped back ten years, if it is not due to the rapidly increasing artificiality of the human environment?—J. W. R.

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R.C.V.S. COUNCIL ELECTION

Sir,—May I be permitted through the courtesy of your columns to thank all those members of the profession who voted for me at the recent Council election.

It will be my earnest endeavour to repay their confidence by regular attendance at the meetings of the Council and by giving careful consideration to all the problems which will confront the profession in the near future.

Yours faithfully,

Crabwood, Oxted. Arnold Spicer.
July 4th, 1946.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Parasitic Mange*	Sheep Scab	Swine Fever
June 1st to 15th, 1946 ...	2	2	—	—	13
Corresponding period in—					
1945 ...	4	2	—	1	37
1944 ...	5	1	—	—	34
1943 ...	10	—	1	1	20
Total Jan. 1st to June 15th, 1946 ...	49	26	4	34	265
Corresponding period in—					
1945 ...	52	79	5	38	489
1944 ...	107	22	6	59	359
1943 ...	153	10	6	99	234

Note.—The figures for the current year are approximate only.
* Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at May 31st, 1946, was as follows:—

England	Wales	Scotland	Total (Great Britain)
5,862	9,800	6,444	22,106